

Description of a new species allied to *Podolepis robusta* (Asteraceae: Gnaphalieae) from the south-eastern Australian Alps

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Introduction

During field work in the mountains of north-east Victoria, it became apparent that populations previously referred to *Podolepis robusta* (Maiden & Betche) J.H.Willis included several forms, initially apparent through colour and size of flowering heads and character of foliar pubescence, one of which appears to have been reduced to local rarity on the Bogong High Plains, at least in part through the impacts of cattle grazing (pers. obs.). Further investigation of this variation indicated the existence of a clearly distinguishable additional species, which is described here as *P. laciniata* Frood. In examining specimens of *P. robusta* from CANB, MEL and NSW, a range of variation was observed that may warrant recognition of several additional subspecies, however further field work is required to reliably confirm the distinctiveness of these. In the interim, a generalised description of *P. robusta* is provided.

Terminology

Terminology herein follows that of recently published treatments of *Podolepis* Labill. (e.g. Everett 1992; Jeanes 1999; Jeanes 2015) so that differences between taxa may more readily be discerned. In particular, 'intermediate bracts' refer to those approximately midway between the basal and most distal bracts of the involucre. The 'claw' is the narrow, non-membranous section proximal to the expanded, thinner-textured lamina. Measurements have been taken from dried herbarium specimens.

Abstract

Podolepis laciniata Frood, a segregate from *P. robusta* (Maiden & Betche) J.H.Willis, is newly described and illustrated, with notes on its distribution and habitat. Variation in *P. robusta* is briefly discussed.

Key words: *laciniata*, Bogong, cattle, alps, grazing

Taxonomy

1. *Podolepis laciniata* Flood, *sp. nov.*

Type: VICTORIA. West of Buckety Plains, near Lunch Saddle, adjacent to Cope Road, Bogong High Plains, 16.ii.1982, R.J. Adair 1627 (holo: MEL 1556015A; iso: CANB 8905062, NSW 421229).

Podolepis sp. aff. *robusta* (N.E. Alps) *sensu* Walsh & Stajsic (2007), pp. 61, 248.

Podolepis sp. N.E. Alps (N.G. Walsh 5964) Vic. Herbarium *sensu* CHAH (2011).

Perennial herb to c. 70 cm high, with multiple shoots arising from basal rosette. *Taproot* stout. *Basal leaves* narrowly oblanceolate, with acute to narrowly obtuse apex, 6–28 cm long, mostly 1.8–5.0 cm wide, greyish when young, with short, crisped multicellular hairs overlain by fine arachnoid hairs, the latter usually denser on the abaxial surface, becoming sparser with age. *Cauline leaves* with similar pubescence to the basal ones but often more densely indumented. *Confflorescence* a loosely corymbose panicle, almost flat-topped at maturity, with 3–17 capitula. *Peduncles* elongating, (6–) 14–18 cm long at anthesis, with 1–several reduced leaf-like bracts, grading into hyaline outer involucre bracts. *Capitula* clear yellow when fresh, mature capitula 30–50(–55) mm diameter. Claw of intermediate *involucre bracts* usually 1.5–2.0 mm wide (rarely narrower), c. 7–11 mm length, with honey-coloured crisped and glandular pubescence of variable length, but mostly 0.2–0.3(–0.5) mm long. Lamina of intermediate involucre bracts broadly ovate to reniform, c. 5–7 mm wide, c. 6–10 mm long. *Ligulate florets* 14–20 mm long (from base of pappus to apex), c. 3.0–4.5 mm wide, apex deeply incised into 3–5 lobes c. 2.0–4.5 mm long, rarely with secondary lobing. *Tubular florets* 9–12 mm long, with corolla lobes 1–2 mm long. *Pappus bristles* c. 6–8 mm long, barbellate-plumose with hairs to c. 0.2 mm long. Mature *cypselas* scabrid to papillose, at least in upper portion, 3.0–4.5 mm long. (Figs 1a, 2)

Selected specimens (from c. 65) examined: **NEW SOUTH WALES.** Cascade Trail, near Dead Horse Gap, Snowy Mountains, 27.ii.1971, J.I. Raine ANU 10350 (CANB, NSW); Dead Horse Gap (Alpine Way), c. south of Mt Kosciuszko, 8.i.1959, N.C. Ford s.n. (NSW 47036); Gold Seeker Track near Kiandra, 12.ii.1996, M. Ito 96093 (MEL, NSW). **AUSTRALIAN CAPITAL TERRITORY.** Between Mts Ginini and Little Ginini, Brindabella Range, 30.i.1975, P. Ollerenshaw PO/1510 (CANB); Summit of Mt. Gingera, Cotter River District, 28.ii.1962, R.D. Hoogland 8470 (NSW). **VICTORIA.** Sun Valley, 1.1 km north-west of water tower in west arm of Rocky Valley Storage Dam, Bogong High Plains, 22.ii.1982, R.J. Adair 1608 (MEL, CANB); Approx. 6 km south-east of Hotham Village on Omeo Road, 25.i.1981, M.G. Corrick 7134 (CANB, MEL); Wombargo Track about 15 miles [24 km] in from Suggan Buggan Road towards Limestone Creek, 9.iii.1966, E.J. Carroll s.n. (CBG 17470); The Playgrounds, 2.5 km SW of Mt Cobberas No. 1, 21.i.1982, N.G. Walsh 856 (MEL, NSW); 'Diggers Holes', Nunniong, S.i.1949, N.A. Wakefield 2636 (MEL).

Distribution and habitat: Apparently restricted to the Australian Alps Biogeographic Region (Commonwealth of Australia 2012) where recorded from the Snowy Mountains in Kosciuszko National Park in New South Wales (e.g. Dead Horse Gap, Mt Jagungal, Kiandra area, Yarrongobilly), extending north to the Brindabella Range in the Australian Capital Territory and south-west through the Cobberas to Mt Hotham and the Bogong High Plains in Victoria.

The species appears to favour open, grassy habitats around treelines (typically *Eucalyptus pauciflora* Sieber ex Spreng.), either at the true upper limit or on the edge of inverted treelines associated with cold air drainage. Altitude range c. 1200–1700 m.

Etymology: The epithet refers to the deeply lacerated apex of the ligules of the outer florets, in comparison to the relatively shallowly lobed ligulate florets of *Podolepis robusta*.

Notes: *Podolepis laciniata* differs from *P. robusta* in its substantially larger, more deeply dissected ligules; the presence (and usually abundance) of crisped hairs on the basal foliage; broader involucre claws and larger

Key to *Podolepis laciniata* and *P. robusta*

- 1 Ligulate florets yellow, 14–20 mm long (from base of pappus), apex deeply divided into 3–5 lobes, 2–4.5 mm long (rarely with secondary lobing); crisped hairs usually conspicuous on mature basal leaves; claw of involucre bract typically c. 1.5–2.0 mm wide; mature cypselas 3.0–4.5 mm long 1. *P. laciniata*
- 1: Ligulate florets yellow to orange, 9–13 mm long, apex with 3–5 teeth to 2 mm long; crisped hairs absent from leaf surfaces (rarely a few present on leaf margins); claw of involucre bract c. 1.0 mm wide; mature cypselas 2.5–3.0 mm long 2. *P. robusta*

laminae; longer tubular florets; larger cypselas and broader capitula.

The leaves of one specimen (*E. Gauba s.n.* NSW 125981) from Mt Gingera in the Australian Capital Territory are woollier than usual, superficially resembling the lanuginose variant of *P. robusta* (discussed below) whereas two specimens (*E.J. McBarron 12145* (NSW); *H. Salasoo 3741* (NSW)) have almost glabrous basal leaves. Both of these deviations from the usually distinctive appearance of *P. laciniata* retain the characteristic larger, deeply dissected ligules and, although sparse, crisped hairs on the leaves. It is possible that these specimens are of hybrid origin.

2. *Podolepis robusta* (Maiden & Betche) J.H. Willis, *Vict. Naturalist* 70: 224 (1954)

Podolepis acuminata R.Br. var. *robusta* (Maiden & Betche) J.H. Willis, *Vict. Naturalist* 59: 120 (1942); *Podolepis longipedata* var. *robusta* Maiden & Betche, *Proc. Linn. Soc. New South Wales, ser. 2*, 23: 12 (1898).

Type: NEW SOUTH WALES. Kiandra district, Feb. 1897, *E. Betche s.n.* (lectotype MEL 727578; isolectotype NSW), *vide* J.H. Willis, *Vict. Naturalist* 70: 224 (1954).

Perennial herb, to 80 (rarely to 100) cm high, with multiple shoots arising from basal rosette. *Taproot* stout. *Basal leaves* oblanceolate, 4–20 cm long, 1.5–5.5 cm wide, with obtuse to broadly acute apex, glabrous, light green, rarely moderately to densely white-woolly, stems and cauline leaves with woolly indumentum. *Conflorescence* narrow to loosely corymbose panicles, with 3–11 capitula. *Peduncles* variously elongating, with 0–2 deciduous to persistent woolly bracts to 10 mm long and sometimes several additional hyaline appendages which grade into the involucre bracts towards the base of the capitula. *Capitula* clear yellow to orange when fresh, mature capitula 25–35(–40) mm diameter. *Claw* of intermediate *involucre bracts* c. 1 mm wide, to 5(–10) mm long, with pale brown to purplish glandular hairs <0.5 mm long (especially in lower section). *Lamina* of intermediate involucre bracts ovate, c. 3.5–5.0 mm wide and 5–8 mm long. *Ligulate florets* 9–13 mm long (from base of pappus to apex), c. 2.0–3.0 mm wide; apex toothed, with 3–5 teeth c. 0.7–2.0 mm long. *Tubular florets* 6–10 mm long, with corolla lobes usually 0.5–1.2 mm long (2.0–2.5 mm long in woolly-leaved variant). *Pappus* bristles c. 4.0–8.5 mm in length, barbellate with teeth c. 0.1(–0.2) mm long. *Cypselas* sparsely scabrid in

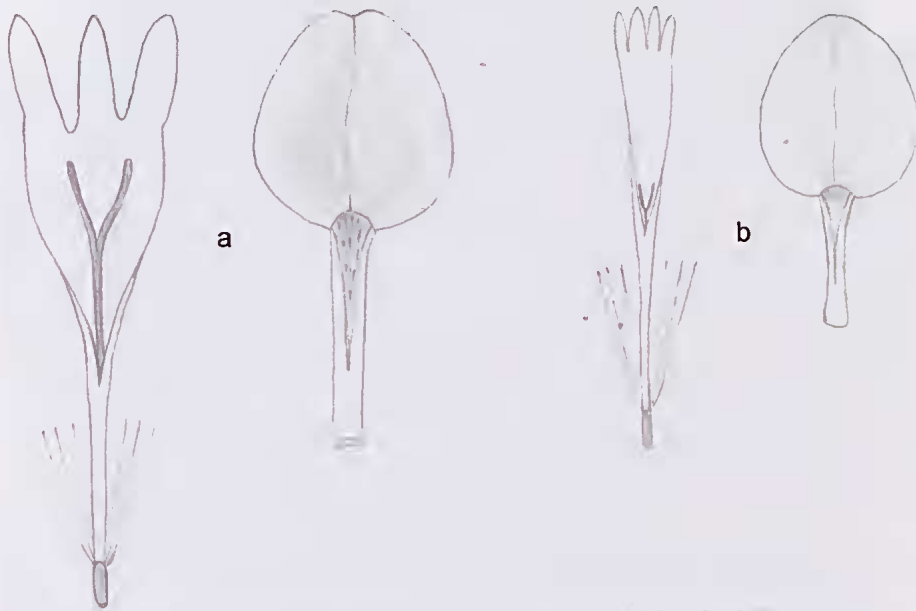


Figure 1. Ligulate florets and intermediate involucre bracts of **a.** *Podolepis laciniata* (N.G. Walsh 5964 (MEL)) and **b.** *P. robusta* (N.G. Walsh 5970 (MEL))

upper part, 2.5–3.0 mm long. (Figs 1 b, 3). *Alpine Podolepis*, *Cattleman's Lettuce*, *Mountain Lettuce*.

Selected specimens (from c. 165) exomined: **NEW SOUTH WALES.** 6 miles [10 km] east of Kiandra, 26.ii.1952, *N.T. Burbidge* 3805 (CANB); Approx. 300 m from Charlottes Pass on track to Blue Lake, Kosciusko National Park, 15.iii.1977, *D. Verdon* 2649, *B. Bornsley & D. Young* (CANB); Schlink Pass Road, Spur above descent to Geehi, Kosciusko National Park, 30.i.1964, *M.E. Phillips s.n.* (CBG 41240); 3.2 km from Grey Mare Track turnoff, along Happy Jacks Road, towards Happy Jacks Pondage, Snowy Mountains, 17.i.1966, *E.J. Carol* 126 (CANB); One mile [1.6 km] from Beacon Hill Track towards Happys Hut, Happy Jacks Plains, Snowy Mountains, 20.i.1966, *E.M. Canning s.n.* (CBG 14455). **AUSTRALIAN CAPITAL TERRITORY.** Between Pryors Hut and Mt Ginini, Brindabella Range, 19.i.1983, *R. Coveny* 11541 & *P. Hind* (CANB); Ginini Flats just north of Mt Ginini, 11.ii.1975,

T.A. Halliday 318 (CANB). **VICTORIA.** Snow plain at base of Mt McLeod, Mt Buffalo National Park, 27.i.1982, *P.S. Short* 1385 (CANB, MEL); Snowy Plains, 1.ii.1982, *E.A. Chesterfield* 1603 (MEL); Lost Plain, 44 km NE of Licola, 7.iii.1993, *P.C. Jobson* 1993 (MEL); Mt Buller, between peak and Little Mt Buller, 29.i.1983, *C.W. Higgins* 71 (MEL); Mt Stirling, near summit, 30.i.1982, *M.G. Corrick* 7948 (MEL).

Distribution and habitat: Reasonably common and widespread throughout the Australian Alps Biogeographic Region (Commonwealth of Australia 2012), from Mt Ginini (Namadgi National Park, Australian Capital Territory), through the Snowy Mountains (New South Wales) and virtually throughout the Victorian alps and subalps as far south as the Baw Baw Plateau.

Podolepis robusta usually occurs above the (*Eucalyptus pouciflora*) treeline (or below where the treeline is



Figure 2. *Podolepis locinioto*, Big River Fire Trail, Bogong High Plains, Victoria (photograph N. Walsh)

inverted in cold-air drainage hollows). It typically occurs in subalpine/alpine grassland and open heathland. Where *P. robusta* and *P. laciniata* are \pm sympatric, *P. robusta* will nearly always be found at higher elevations but, in a few instances, the two may occur in mixed populations. Altitude range c. 1200–1920 m.

Notes: While the typical form of the species has bright green, glabrous leaves, loosely corymbose conflorescences and capitula with yellow florets, there is considerable variation, some at least having a geographic pattern. A variant with lanuginose leaves occurs in the Brindabella Range, Australian Capital Territory. Plants with generally shorter florets occur on the Baw Baw Plateau, Victoria, and plants with narrowly paniculate conflorescences, the shortly pedunculate capitula often with orange-yellow florets, have been collected on the Bogong High Plains, Victoria. Some of this variability may be a consequence of hybridisation between the two species treated herein. Specimens from CANB and NSW on loan to MEL were determined with provisional infraspecific names for some of these variants. Subsequent reassessment of the variation within *Podolepis robusta*, as described above, suggests that formal recognition of these variants was premature and further research is needed to understand fully the nature and origin of the variation.

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Figure 3. *Podolepis robusta*, Mt Nelse, Bagong High Plains, Victoria (photograph G. Lay)